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Fisheries Development Division
Fisheries and Habitat Management Branch

Newfoundland
Region

Exploratory Crab Survey
Labrador, 1989

Project Report FDD 1989 – 147

Fisheries and Oceans Pêches et Océans

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FISHERIES
DEVELOPMENT
DIVISION

NEWFOUNDLAND REGION

EXPLORATORY CRAB SURVEY
LABRADOR
1989

PROJECT REPORT FDD 1989 - 147

EXPLORATORY CRAB SURVEY

LABRADOR

1989

BY: E. DAWE

FOR

FISHERIES DEVELOPMENT DIVISION
FISHERIES AND HABITAT MANAGEMENT
NEWFOUNDLAND REGION
P.O. BOX 5667
ST.JOHN'S,NFLD.
A1C 5X1

EXPLORATORY CRAB SURVEY
LABRADOR,1989

CORRECTIONS

PAGE 11 : (4) Noncommercial size - Hard shell

PAGE 17 : SECOND PARAGRAPH
During the survey , 33 fleets of crab pots were set in this sub area . The water depth ranged from 179 to 285 meters.

PAGE 17 : THIRD PARAGRAPH
Catch rates varied from 0.2 to 47.3 lbs per pot.

PAGE 21 : THIRD PARAGRAPH
During the survey , 30 fleets of crab pots were set in this sub area . The water depth ranged from 119 to 421 meters.

PAGE 21 : FOURTH PARAGRAPH
Catch rates varied from 0.0 to 60.5 lbs per pot.

PAGE 24 : THIRD PARAGRAPH
During the survey , 17 fleets of crab pots were set in this sub area . The water depth ranged from 146 to 329 meters.

PAGE 24 : FOURTH PARAGRAPH
Catch rates varied from 0.0 to 41.6 lbs per pot.

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1. INTRODUCTION

The Fisheries Development Division, Fisheries and Habitat Management, carried out an exploratory crab survey from Black Tickle to Makkovik, Labrador. This project commenced August 9, 1989, and finished on September 5, 1989.

The purpose of the survey was to determine the commercial distribution and abundance of snow crab in areas north of the existing commercial crab fishery in Labrador.

The survey was undertaken in co-operation with the Science Branch, Department of Fisheries and Oceans, with a view to collecting maximum biological data pertaining to the resource. Other than small samples needed for research, no commercial crab were landed during the survey.

The "Nautical Enterprise", a 65' commercial crab fishing vessel, was chartered to complete this survey. Descriptions of the vessel, fishing gear and method of operation are provided in this report.

2. DETAILS OF SURVEY AREA

The exploratory survey was carried out between Latitude 52°50'N (off Grady Island) to Latitude 55°30'N (off Hopedale). It covered approximately 8000 square nautical miles from the coast line to 110 nautical miles offshore. Fleets of crab pots were set in depths ranging from 119 metres to 421 metres. The areas surveyed were divided into units. Each unit covered 100 square nautical miles, and one fleet of 25 pots was set in each unit. For the purpose of this report, the survey area was divided into three sub areas. Sub areas are adjoining but will be discussed separately.

3. CHARTER VESSEL

The M/V "Nautical Enterprise", owned by Ches Petten, Port-de-Grave, Newfoundland, was chartered for thirty (30) sea days to carry out the exploratory crab survey. The vessel was built in 1983 by Eastern Shipbuilders Limited at South River, Newfoundland. It is multi-purpose and is used for commercial crab fishing, gillnetting and longlining.

The overall length of the vessel is 65' with a beam of 22'. Powered by a 365 BHP Caterpillar diesel engine, it has a cruising speed of 9.5 knots.

The vessel has the following navigational and electronic equipment onboard:

1. Loran C Receivers (2)
   Furuno LC-9 & LC-80
2. Radars (2)
   Racal-Decca 48 mile & Decca Radar 48 mile
3. Radio Telephone (1)
4. VHF Radio (1)
5. Color Plotter (1)
   JRC NW4-52R
6. Color Fishscope 101 (1)
7. Paper Sounder, Epsco (1)
8. Decca Pilot - 150 (1)
9. Magnetic Compass (1)

The crew consisted of a skipper, cook and three deck hands.

M/V NAUTICAL ENTERPRISE

FIGURE 1

4. FISHING GEAR AND METHOD OF OPERATION

4.1 FISHING GEAR

The fishing gear used in this project was the Japanese style conical crab pot (Figure 2) which is typical of those used in the Newfoundland crab fishery. The pot has a frame made from one-half inch and one quarter inch iron rods welded together. Each pot has a 48 inch diameter at the base and tapers to a 28 inch diameter top.

The frame of the pot is covered by 5 1/4 inch stretch-mesh polyethylene webbing with a plastic cone at the top which allows crab to enter but is funnel shaped to prevent their escape. The webbing at the base of the pot is held together by a drawstring attached to a rubber band and hook which can be easily released to deposit the catch on the deck of the vessel. Each pot weighs approximately 20 lbs and is cone-shaped so they may be stacked using a minimum of space.

For the purpose of this survey, each fleet of gear consisted of 25 pots (Figure 3). This was considered sufficient to determine the crab resource of a particular area. The buoyline and groundline of each fleet was made of 5/8 inch diameter polypropylene rope while the crab pot bridles and support ropes were made of one-half inch diameter polypropylene rope. A lead rope was attached to the buoyline 10-15 fathoms from the buoy to prevent excess rope from floating on the surface. Each pot was tied to the groundline at 20 fathom intervals.

A CONICAL CRAB TRAP

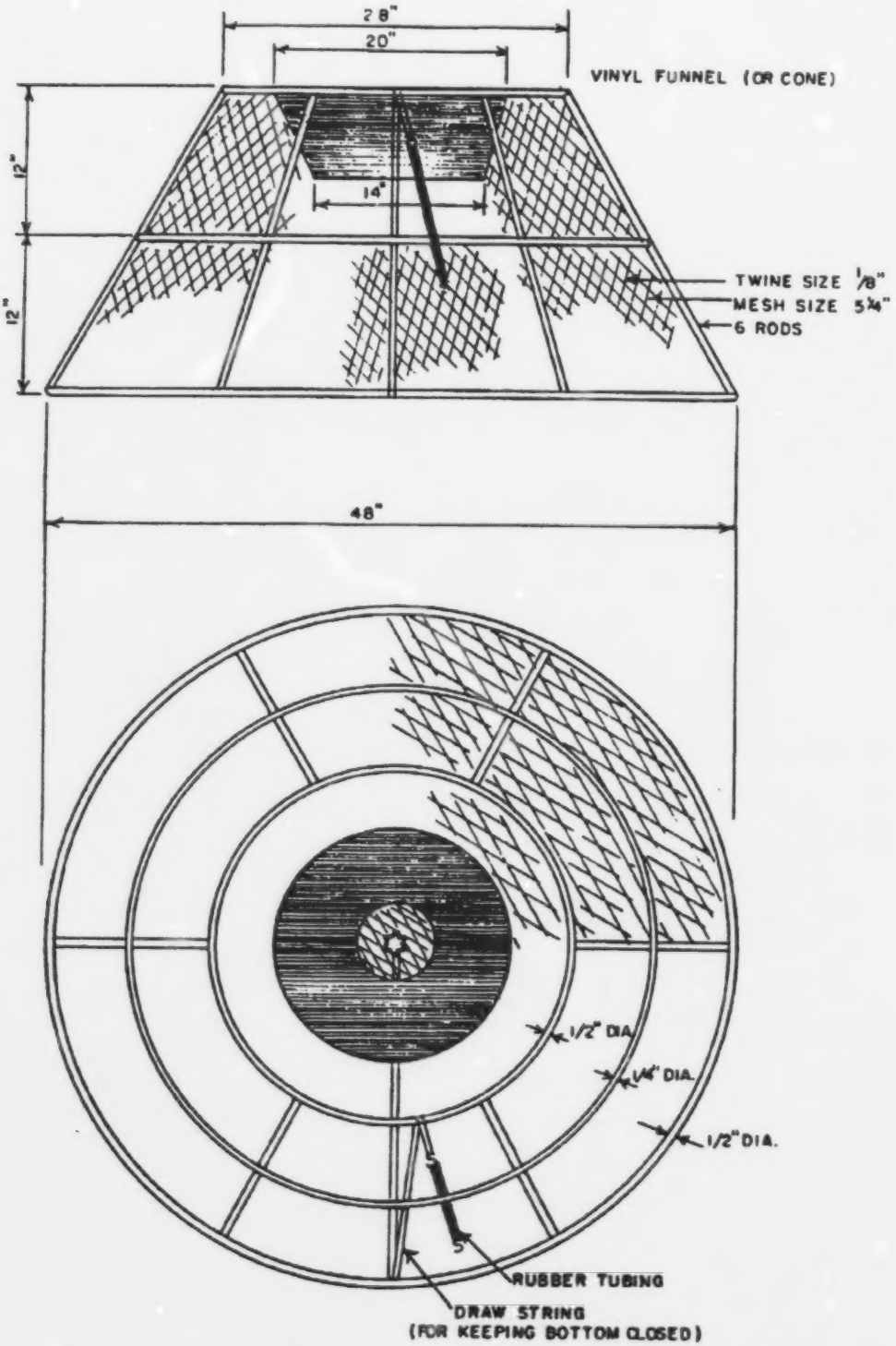

Figure 2

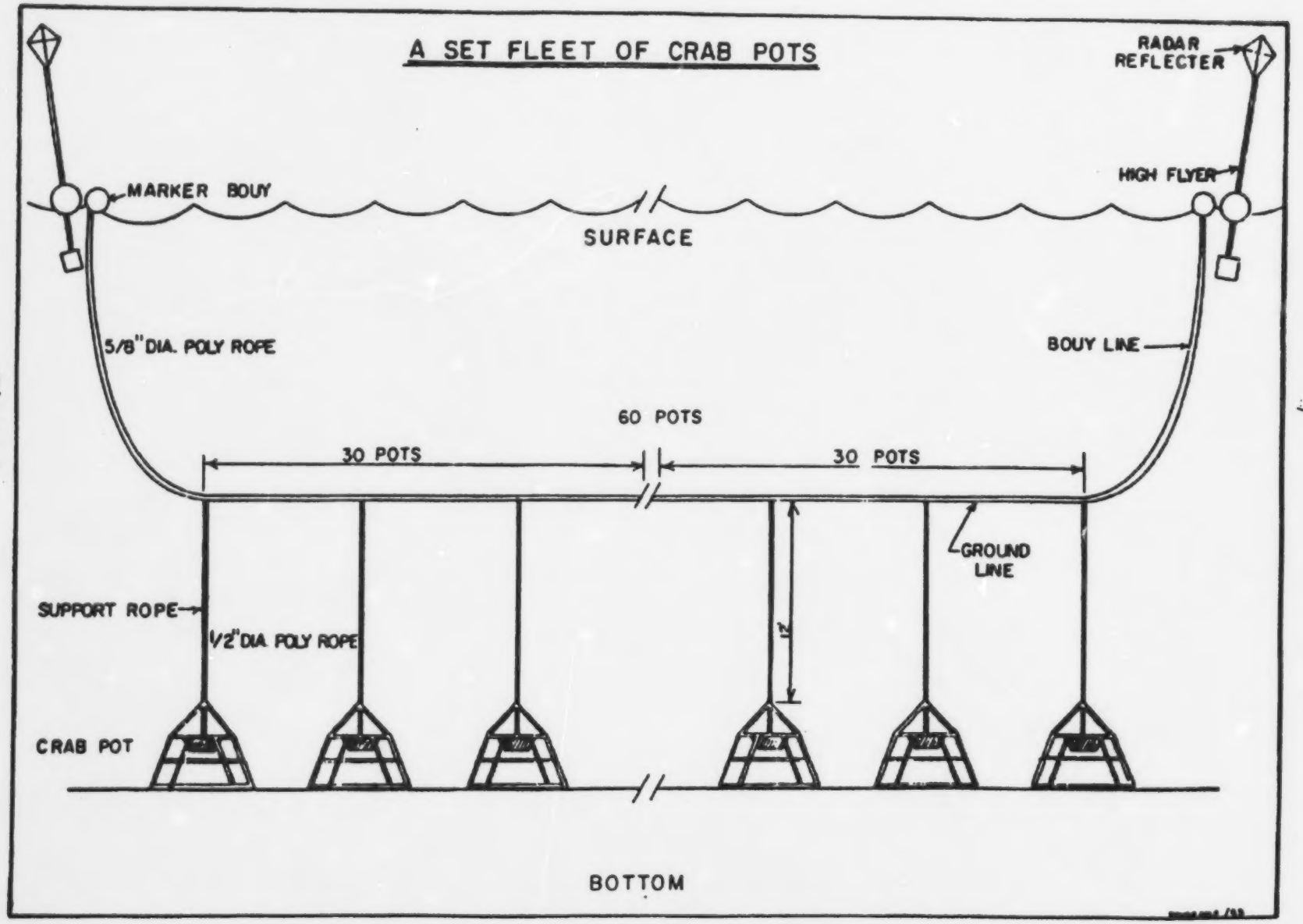
A SET FLEET OF CRAB POTS
RADAR REFLECTER
HIGH FLYER
MARKER BOUY
SURFACE
5/8" DIA. POLY ROPE
BOUY LINE
60 POTS
30 POTS
30 POTS
GROUND LINE
SUPPORT ROPE
1/2" DIA POLY ROPE
12'
CRAB POT
BOTTOM

Figure 3

4.2 SETTING PROCEDURE

First, a sufficient amount of rope was attached for a buoyline. The buoyline was usually 20-30 fathoms longer than the depth of the water to allow for tide, wind and depth changes.

The pots are baited by impaling 1 1/2 to 4 mackerel on a wire suspended from the cone of the pot. The process of baiting the pots is completed during the hauling procedure.

With the vessel moving at one-half speed, the hi-flier (radar reflector) and the inflatable buoy were thrown over the side. The boat motion pulls the main line over the side. A crewman removes a pot from the stack, closes the bottom, secures the purse line and passes the pot to the launcher, who throws it over the side as the main line pulls the pot line taut. They continue to set in this manner until the end of the fleet is reached. The second buoyline was set out followed by an inflatable buoy.

The positions of the high-flier and inflatable buoy, the water depth and other pertinent information were recorded as each fleet was being set.

Setting a fleet of 25 crab pots took approximately 10 minutes from start to finish.

4.3 HAULING PROCEDURE

A fleet of crab pots was usually hauled between 35 and 57 hours after setting. However, some fleets were hauled after fishing for only 15 hours while others were fishing for up to 210 hours, due to inclement weather conditions and distances from port. The average amount of time fleets fished was 54 hours. Traps were hauled by means of a standard crab pot hauler.

SETTING A FLEET OF CRAB POTS

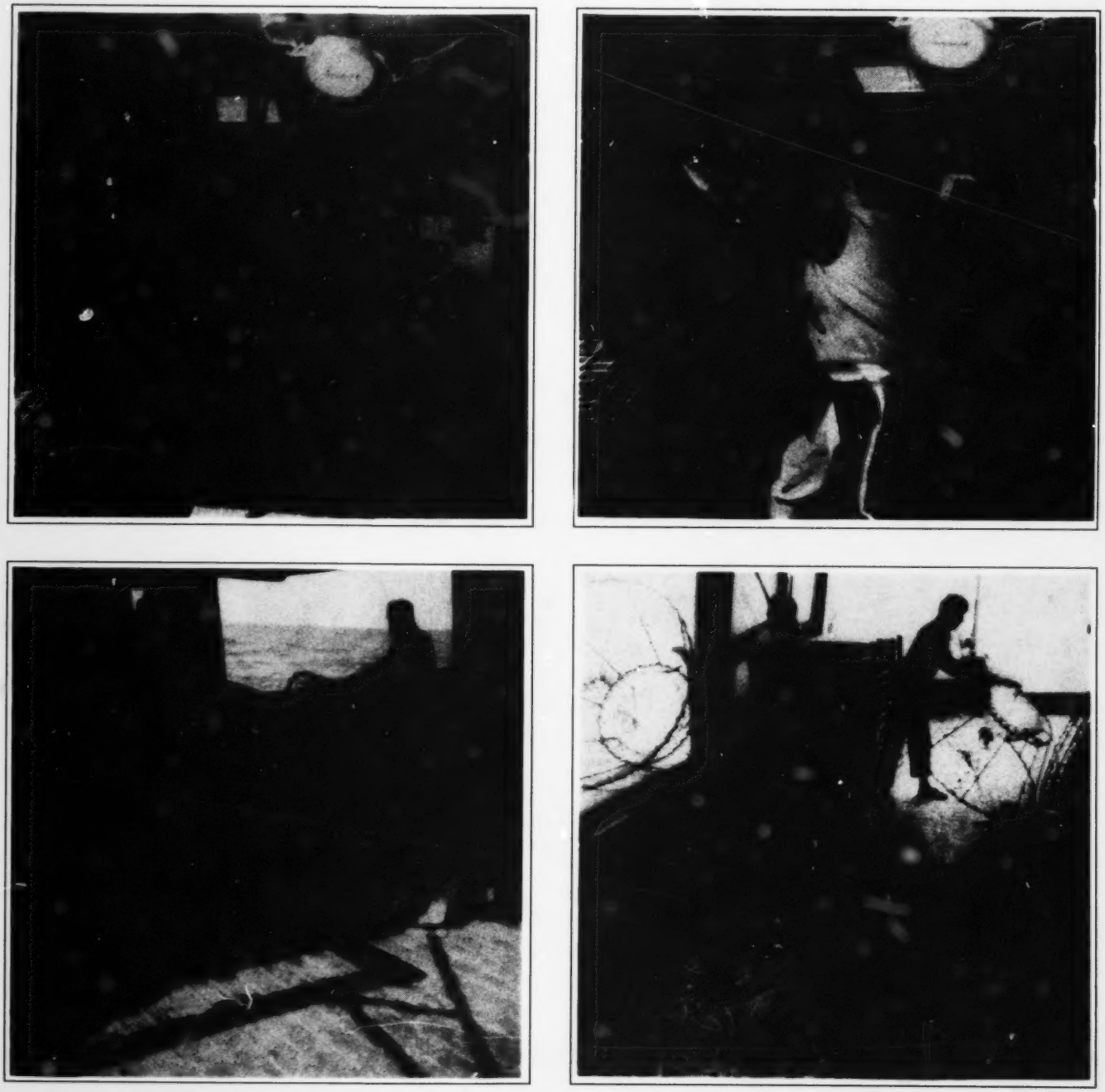

FIGURE 4

HAULING A FLEET OF CRAB POTS

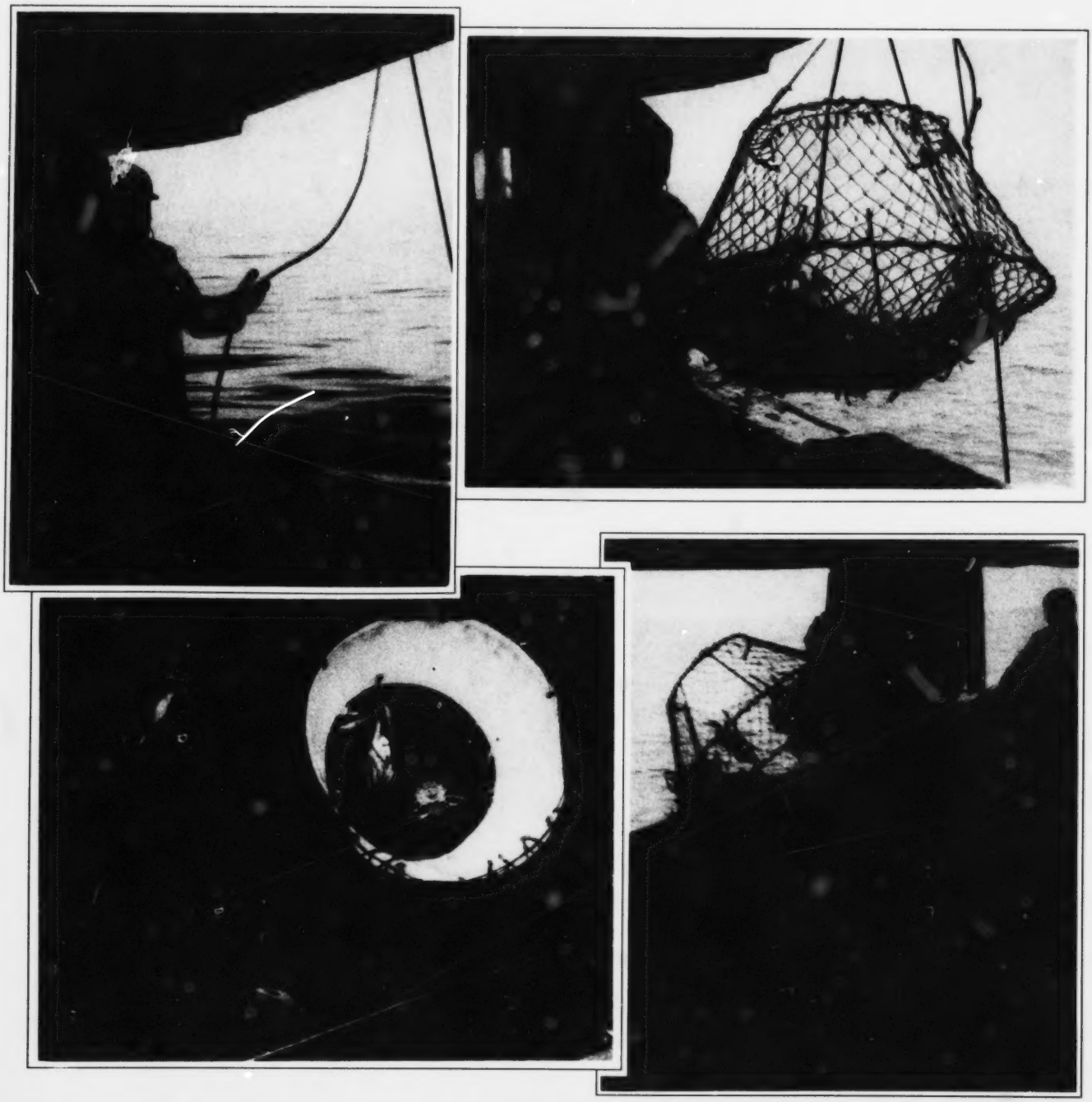

FIGURE 5

The Skipper operated the boat and hydraulics from the aft pilotage station and also coils the incoming line. As the first pot came to the rail, it was lifted aboard and while the next pot was being hauled, the drawstring on the first pot was released and the catch was deposited in crab boxes on the deck. Then the pot is moved aft to the baiter who removes any old bait and rebaits the pot. It is then taken by the stacker, upended with the bottom open and stacked 35 pots high (one fleet). This operation is fairly standard on all commercial crab fishery vessels, except the catch is deposited through a hole cut in the deck. The hauling procedure for hauling a fleet of 35 crab pots usually takes about 30 minutes.

4.4 HANDLING CRAB ON BOARD

Once the first crab pot came on board, the catch of crab was deposited into a crab box numbered with the corresponding pot number (1 to 35). The catch was placed on the stern of the vessel until the fleet was hauled.

While steaming to the next fleet of gear, the crab in pots numbered five, 10, 15, 20, 25, and 30 were measured and shell conditions determined. In the remaining pots, the catch was recorded and shell conditions determined. The crab were then separated into four categories:

(1) Commercial Size - Soft Shell

(2) Noncommercial Size - Soft Shell

(3) Commercial Size - Hard Shell

(4) Noncommercial Size - Soft Shell

A commercial size crab is 95 mm (3 3/4") or larger across the widest part of the carapace.

HANDLING CRAB ONBOARD

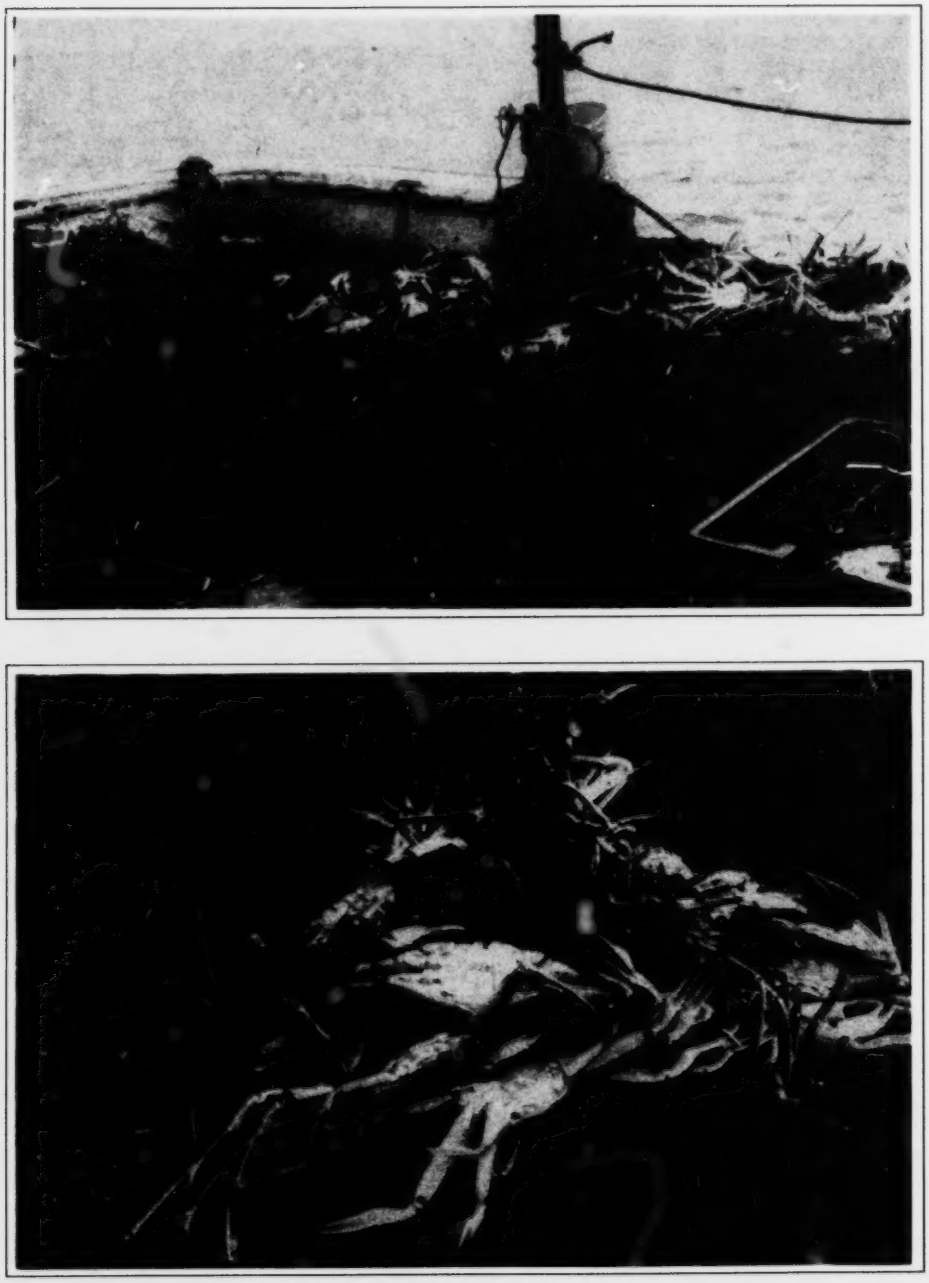

FIGURE 6

HANDLING CRAB ONBOARD CONT'D

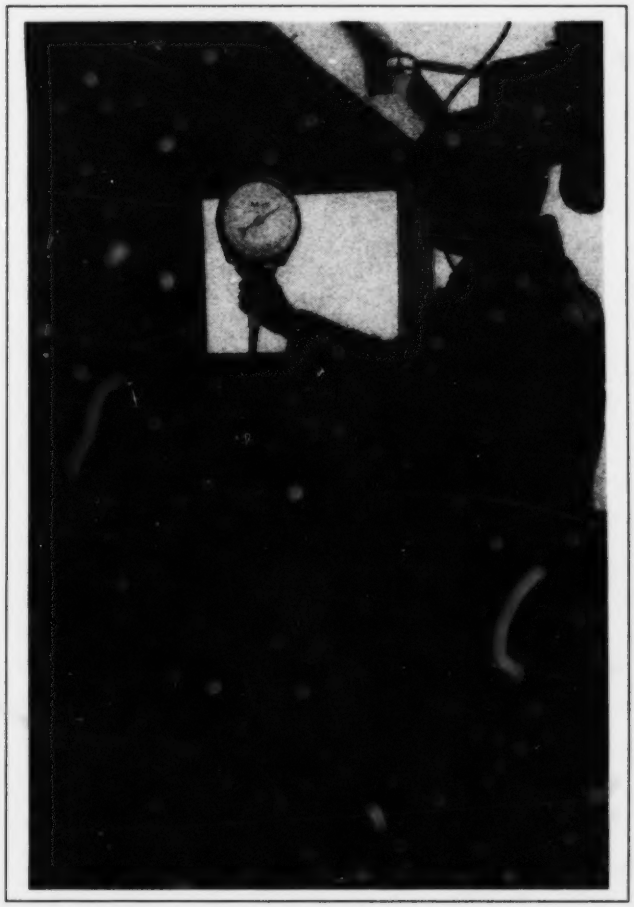

FIGURE 7

After the measurements and shell conditions were completed, the number of commercial and noncommercial crab were recorded separately and weights of crab from each of the four categories mentioned above were recorded. The crab were then returned to the sea.

5. DISCUSSION OF RESULTS

This project was carried out between August 9 and September 5, 1989, and was divided into four trips, with each trip lasting between four and nine days, depending on weather conditions.

The area surveyed (Figures 8-9) was north of Black Tickle, around Hamilton Bank, Harrison Bank and the southern edge of Makkovik Bank, between 25 miles from the coast out to 110 miles offshore.

The parts of this area which contained water depths in which crab are usually found were divided into 100 square nautical mile units for a total of 8000 square nautical miles. This grid was then designated with letters horizontally and numbers vertically for easy identification of each unit (Figures 8-9). One fleet of gear containing 25 crab pots was fished in each unit.

The area chart (Figures 8-9) shows the position of each unit. Each fleet of gear that was set is represented on the chart by a symbol (.°) showing the location of the fleet and the average catch in pounds. Any unit with over 15 lbs of legal size crab per pot has commercial potential.

In good crab fishing areas, if a pot contained less than 5 lbs of crab, it was not considered as fishing properly. Therefore, these pots were not used in calculating the average commercial catch per pot. Also, five pots on each end of a fleet were eliminated. This would account for some fleets being shown as having less than 25 pots.

The survey area was divided into three adjoining sub areas which, for the purpose of this report, will be discussed separately.

-1989 CRAB RESOURCE SURVEY-

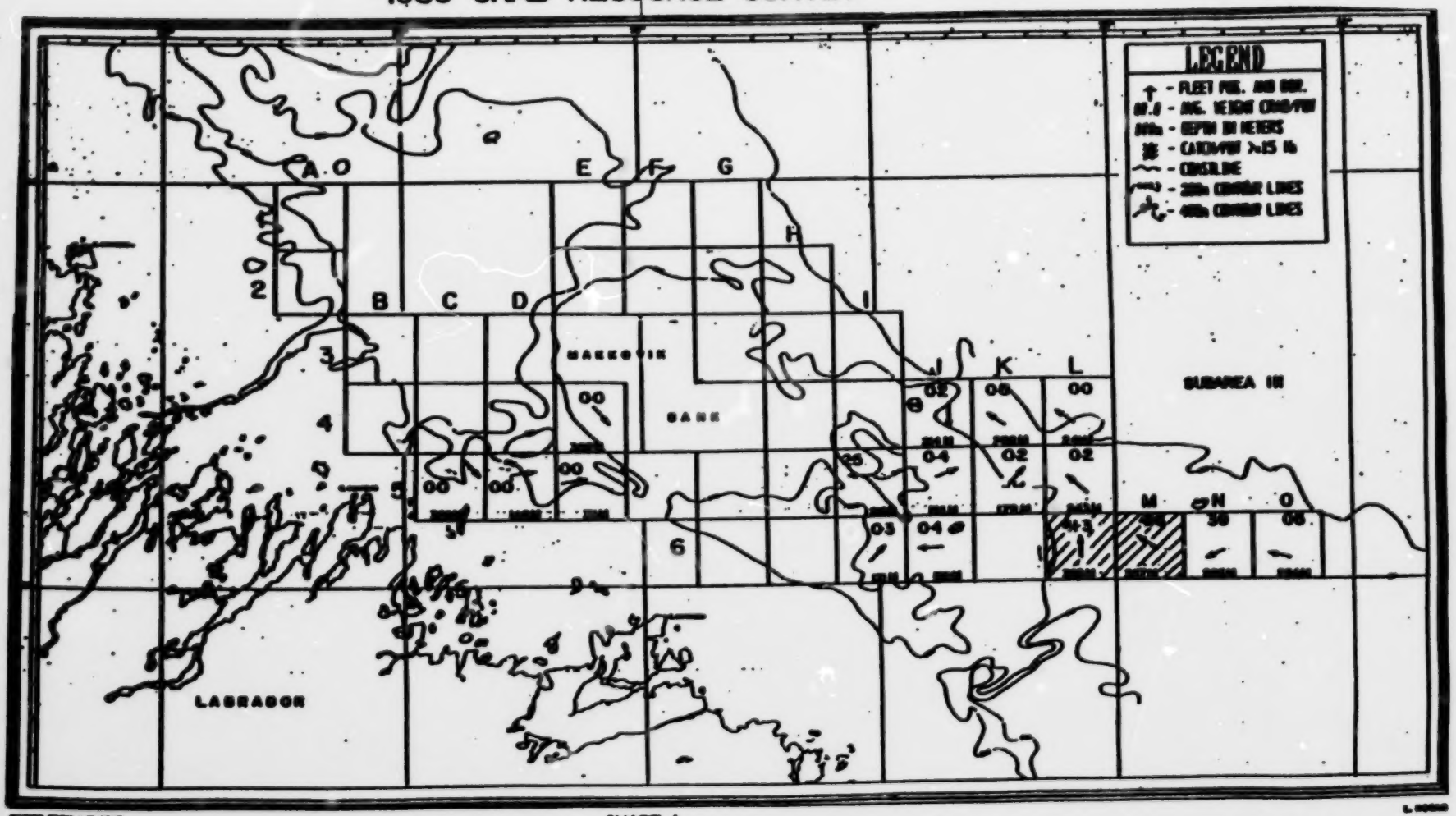

CHART I

FIGURE 8

-1989 CRAB RESOURCE SURVEY-

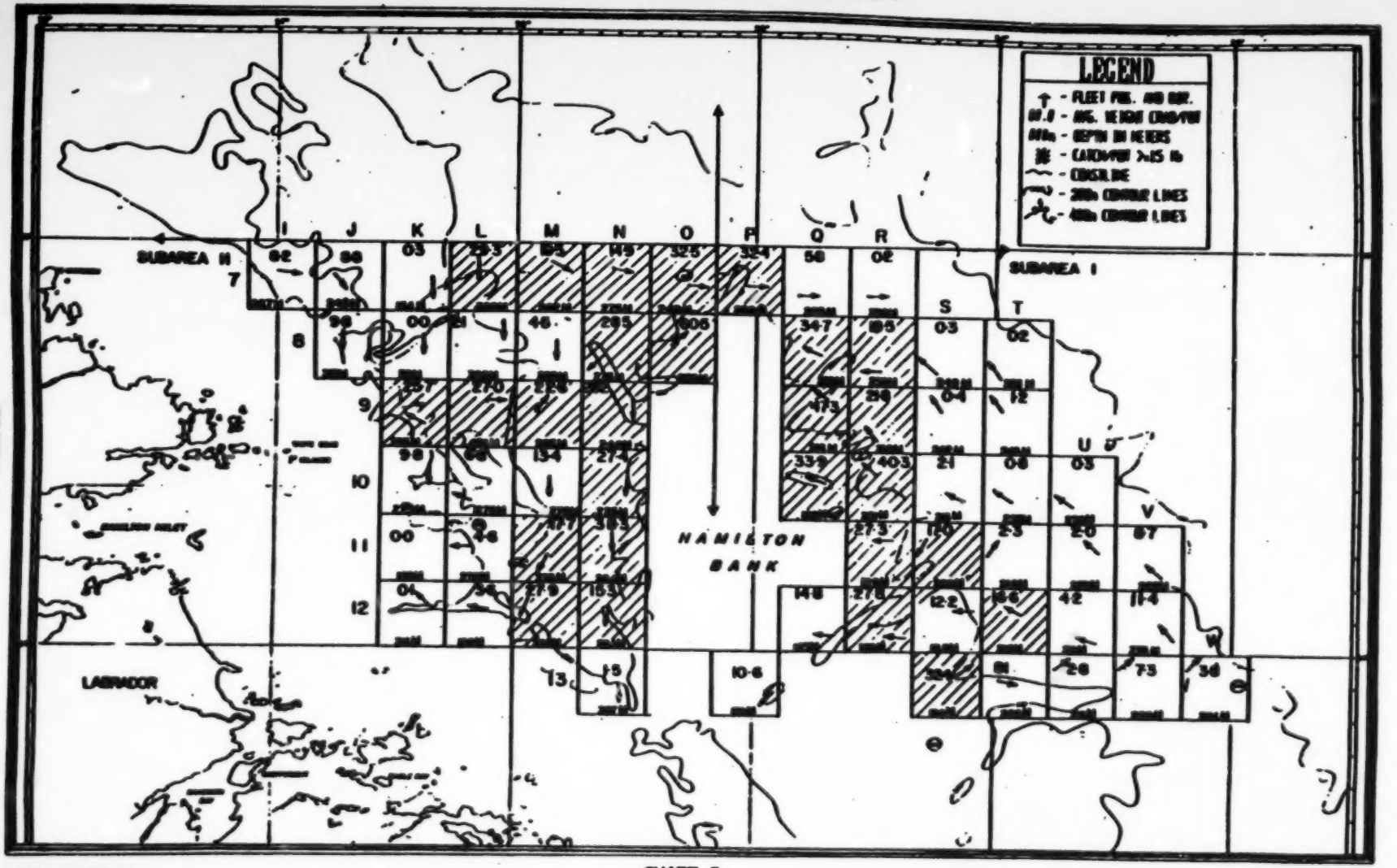

CHART 2

FIGURE 9

5.1 SUB AREA I

This sub area is situated within the co-ordinates 53°50'N, 55°10'W and 53°50'N, 52°55'W to the south and 55°00', 55°10'W and 55°00N, 54°20'W to the north, and encompasses 3,300 square nautical miles, excluding the shoal of the Hamilton Bank which was not surveyed. This sub area was divided into 33 units of 100 square nautical miles each.

During the survey, 33 fleets of crab pots were set in each unit in depths ranging from 179 to 285 meters. The amount of time each fleet was fishing varied from 15 to 117 hours, with an average of 46 hours.

The type of bait used was mackerel with 1 1/2 to 2 mackerel per pot. Catch rates varied from 0.2 to 47.3 lbs for an average per pot. Catch rates were down on the outside units. This could be attributed to the fact that there was a large density of bait-eating sea lice in this area, at this time, because there were signs of crab in all fleets.

Twenty-one fleets averaged catches of <15 lbs per pot, four fleets resulted in catches of 15 to 25 lbs per pot and eight fleets produced crab in excess of 25 lbs per pot. Fleets which produced fair to good catches were located all along the outside edge of the Hamilton Bank where no signs of sea lice were present.

The area where crab were found extends for approximately 70 nautical miles from north to south and 25 nautical miles from west to east. Here the potential for a viable commercial crab fishery is excellent. All signs indicate that crab are abundant over this entire area.

TABLE 1 - SUMMARY OF RESULTS - SUB AREA I

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time (Hours)	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
P-7	54 52.5'N 55 01.76"W	25	Aug. 21	32	209	290	811	32.4
P-13	53 53'.04"N 54 55'.08"W	25	Aug. 12	19	179	137	266	10.6
Q-7	54 52'.87"N 54 49'.56"W	18	Aug. 21	29	220	38	104	5.8
Q-8	54 44'.06"N 54 44'.58"W	25	Aug. 20	117	216	148	867	34.7
Q-9	54 35'.30"N 54 41'.41"W	25	Aug. 20	116	216	176	1182	47.3
Q-10	54 24'.91"N 54 40'.21"W	25	Aug. 20	115	188	182	847	33.9
Q-12	54 00'.92"N 54 40'.31"W	25	Aug. 12	22	183	117	371	14.8
R-7	54 52'.80"N 54 34'.94"W	25	Aug. 21	27	256	10	6	0.2
R-8	54 41'.57"N 54 32'.97"W	25	Aug. 16	35	232	78	462	18.5
R-9	54 32'.77"N 54 30'.08"W	25	Aug. 20	116	210	104	544	21.8
R-10	54 27'.02"N 54 30'.48"W	25	Aug. 20	116	210	103	1007	40.3
R-11	54 16'.32"N 54 21'.57"W	25	Aug. 15	52	199	169	683	27.3
R-12	54 02'.28"N 54 25'.52"W	25	Aug. 12	25	183	240	696	27.8
S-8	54 41'.89"N 54 16'.87"W	25	Aug. 16	34	240	17	8	0.3
S-9	54 38'.04"N 54 10'.34"W	25	Aug. 16	33	242	6	10	0.4

TABLE 1 (Cont'd) - SUMMARY OF RESULTS - SUB AREA I

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
S-10	54 21.52"N 54 06.96"W	25	Aug. 15	52	216	7	53	2.1
S-11	54 18.76"N 54 12.71"W	25	Aug. 15	52	209	156	425	17.0
S-12	54 04.73"N 54 03.59"W	24	Aug. 12	29	198	100	292	12.2
S-13	53 56'.32"N 54 03'.20"W	25	Aug. 13	44	194	92	811	32.4
T-8	54 40'.94"N 54 00'.26"W	25	Aug. 16	33	256	9	5	0.2
T-9	54 38'.02"N 54 00'.27"W	25	Aug. 16	33	249	20	30	1.2
T-10	54 22'.17"N 54 00'.94"W	25	Aug. 15	52	225	14	21	0.8
T-11	54 15'.78"N 54 00'.35"W	25	Aug. 15	52	216	20	57	2.3
T-12	54 05'.01"N 53 55'.65"W	24	Aug. 12	31	210	139	398	16.6
T-13	53 54'.99"N 53 55'.75"W	25	Aug. 13	45	205	77	203	8.1
U-10	54 20'.83"N 53 41'.85"W	25	Aug. 14	16	238	7	7	0.3
U-11	54 15'.63"N 53 34'.64"W	25	Aug. 14	15	253	19	50	2.0
U-12	55 00'.94"N 53 39'.04"W	25	Aug. 13	44	216	11	106	4.2
U-13	53 56'.78"N 53 39'.27"W	25	Aug. 13	45	216	13	71	2.8
V-11	54 11'.35"N 53 23'.37"W	19	Aug. 14	15	285	54	166	8.7

TABLE 1 (Cont'd) - SUMMARY OF RESULTS - SUB AREA I

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
V-12	54 04.64"N 53 18.33"W	20	Aug. 14	15	275	17	227	11.4
V-13	53 57.70"N 53 27.57"W	25	Aug. 13	47	229	40	182	7.3
W-13	53 58.06"N 53 12.25"W	25	Aug. 14	15	264	27	94	3.8

5.2 SUB AREA II

This sub area is situated from the center of the Hamilton Bank extending westwards towards the Labrador Coast, within the co-ordinates 54°00'N 56°35'W and 53°50'N 55°10'W to the south and 55°00'N, 57°10'W and 55°00'N, 55°10'W to the north.

This sub area covers 3000 square nautical miles excluding the Shoal of the Hamilton Bank. The area was divided into 30 units of 100 square nautical miles each.

During the survey time, 30 fleets of crab pots were set in each unit in depths ranging from 119 to 421 meters. The amount of time each fleet was fishing varied from 34 to 210 hours with an average of 82 hours per fleet.

Type of bait used was mackerel with two to four mackerel per pot. Catch rates varied from 0.0 to 60.5 lbs for an average pot. Low catch rates were experienced in shoal water and near the coast. No signs of sea lice were present in this area.

Sixteen fleets resulted in catches of <15 lbs per pot. Four fleets resulted in catches of 15 to 25 lbs per pot and 10 fleets produced crab in excess of 25 lbs per pot. Fleets which produced fair to good were located all along the inside edge of the Hamilton Bank in Depths ranging from 225 to 421 meters.

The area where crab were found extends for approximately 60 nautical miles from north to south and 40 nautical miles from west to east. Here again, there appears to be the basis for a viable commercial crab fishery.

TABLE 2 - SUMMARY OF RESULTS - SUB AREA II

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time (Hours)	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
I-7	54 56.32"N 56 55.41"W	25	Sept. 02	65	267	19	204	8.2
J-7	54 53.43"N 56 42.28"W	25	Sept. 02	65	240	16	219	8.8
J-8	54 47.97"N 56 40.24"W	19	Sept. 02	66	317	8	246	9.8
K-7	54 52'.68"N 56 20'.60"W	25	Aug. 29	114	154	1	7	0.3
K-8	54 45'.85"N 56 24'.09"W	25	Aug. 29	112	119	1	1	0.0
K-9	54 32'.85"N 56 24'.14"W	25	Aug. 29	108	393	71	643	25.7
K-10	54 26'.43"N 56 22'.49"W	25	Aug. 29	106	229	75	246	9.8
K-11	54 17'.75"N 56 20'.90"W	25	Aug. 29	99	165	11	1	0.0
K-12	54 07'.23"N 56 24'.51"W	25	Aug. 24	34	216	22	3	0.1
L-7	54 56'.17"N 56 09'.49"W	25	Aug. 30	144	366	7	733	29.3
L-8	54 48'.42"N 56 00'.32"W	25	Aug. 24	74	366	8	52	2.1
L-9	54 37'.32"N 56 00'.88"W	21	Aug. 24	71	421	63	566	27.0
L-10	54 22'.32"N 56 12'.27"W	25	Aug. 29	103	275	68	170	6.8
L-11	54 16'.38"N 56 11'.79"W	25	Aug. 29	101	275	52	115	4.6
L-12	54 05'.42"N 56 07'.35"W	25	Aug. 24	36	188	134	91	3.6

TABLE 2 (Cont'd) - SUMMARY OF RESULTS - SUB AREA II

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
M-7	54 56'.66"N 55 48'.83"W	25	Aug. 22	39	282	32	488	19.5
M-8	54 45'.24"N 55 51'.84"W	25	Aug. 30	210	298	7	113	4.5
M-9	54 36'.99"N 55 50'.37"W	25	Aug. 24	69	265	124	565	22.6
M-10	54 23'.36"N 55 51'.48"W	24	Aug. 24	44	278	82	321	13.4
M-11	54 15'.29"N 55 51'.08"W	25	Aug. 24	41	275	239	442	17.7
M-12	54 07'.31"N 55 52'.66"W	25	Aug. 24	39	293	277	698	27.9
N-7	54 55'.68"N 55 36'.30"W	21	Aug. 22	40	275	23	313	14.9
N-8	54 43'.90"N 55 40'.22"W	25	Aug. 30	209	275	71	712	28.5
N-9	54 35'.16"N 55 29'.98"W	25	Aug. 19	84	240	188	706	28.2
N-10	54 24'.24"N 55 31'.14"W	23	Aug. 19	81	225	184	631	27.4
N-11	54 17'.08"N 55 34'.91"W	25	Aug. 19	78	264	246	958	38.3
N-12	54 06'.01"N 55 36'.18"W	25	Aug. 19	75	264	84	383	15.3
N-13	53 55'.00"N 55 34'.40"W	25	Aug. 19	72	207	39	38	1.5
O-7	54 53'.03"N 55 14'.12"W	25	Aug. 21	34	240	160	813	32.5
O-8	54 47'.03"N 55 20'.07"W	25	Aug. 21	37	238	184	1513	60.5

5.3 SUB AREA III

This sub area is situated north of 55°00' Latitude to 56°00' Latitude from the coast line out to the continental slope. This area covers approximately 4200 square nautical miles excluding the shoals of the Harrison Bank, Makkovik Bank and the depths of the Hopedale Channel. Only 17 units for this area were surveyed because of the fact that the base line for the Loran C runs through this area and it is next to impossible to obtain a fix for this area. Also the irregular bottom type features around the Hopedale Channel is not suitable for crab fishing.

In total, 1700 square nautical miles were surveyed. The seventeen units involved in the survey each covered 100 square nautical miles.

During the survey time, 17 fleets of crab pots were set in each unit at depths ranging from 146 to 329 meters. The amount of time each fleet was fished varied from 15 to 65 hours with an average of 34 hours.

The type of bait used was mackerel with three to four mackerel per pot. Catch rates varied from 0.0 to 41.6 lbs for an average per pot. Only two fleets produced a catch greater than 25 lbs per pot. The other 15 fleets resulted in catch rates well below the 15 lbs per pot.

Excellent area of crab population in the south east of this area on the eastern edge of Harrison Bank, adjoining Sub Area II but units further to the north and west produced few signs to no crab whatsoever.

TABLE 3 - SUMMARY OF RESULTS - SUB AREA III

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time (Hours)	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
C-5	55 17'.71"N 58 42'.05"W	35	Sept. 01	15	329	0	0	0.0
D-5	55 15'.47"N 58 31'.38"W	35	Sept. 01	16	146	0	0	0.0
E-4	55 26'.83"N 58 13'.94"W	35	Sept. 01	23	302	0	0	0.0
E-5	55 14'.75"N 58 22'.44"W	35	Sept. 01	16	311	0	0	0.0
I-5	55 15'.97"N 57 02'.45"W	25	Sept. 02	40	216	15	62	2.5
I-6	55 05'.31"N 56 58'.68"W	35	Sept. 02	63	171	4	12	0.3
J-4	55 23'.81"N 56 39'.36"W	25	Aug. 30	33	214	2	4	0.2
J-5	55 16'.37"N 56 42'.19"W	25	Aug. 31	39	156	2	9	0.4
J-6	55 06'.10"N 56 49'.40"W	35	Sept. 02	65	159	4	13	0.4
K-4	55 23'.00"N 56 27'.69"W	25	Aug. 31	36	289	1	20	0.8
K-5	55 15'.99"N 56 26'.48"W	35	Aug. 31	37	179	2	4	0.2
L-4	55 20'.94"N 56 12'.97"W	25	Aug. 31	39	241	0	1	0.0
L-5	55 13'.33"N 56 08'.66"W	25	Aug. 30	19	243	1	5	0.2
L-6	55 03'.44"N 56 05'.23"W	25	Aug. 30	19	320	47	1033	41.3

TABLE 3 (Cont'd) - SUMMARY OF RESULTS - SUB AREA III

Unit No.	Position	No. of Pots	Date Hauled	Fishing Time	Depth (Mtrs)	Catch (Lbs)		
						Under Size	Comm.	Ave Comm.
M-6	55 04'.39"N 55 48'.81"W	25	Aug. 22	38	267	37	1040	41.6
N-6	55 04'.43"N 55 34'.64"W	25	Aug. 22	37	285	11	99	3.9
O-6	55 03'.69"N 55 22'.20"W	25	Aug. 22	37	264	12	13	0.5

6. GENERAL COMMENTS

In the commercial crab fishery off Newfoundland and Labrador, the type of bait used is mackerel or squid and sometimes a combination of both. Most crab fishermen prefer squid over mackerel because higher catch rates are obtained when using squid for bait.

During this survey, the only bait used was mackerel and the quantity used per pot was less than used in the commercial fishery. It is possible that with more bait and a different type of bait such as squid, catch rates may have been higher.

On the outside edge of the Hamilton Bank and the Harrison Bank in Sub Areas I and III, there were sea lice that ate the bait being used. This possibly resulted in reduced effective crab pot fishing time which could have affected catch rates.

Although Sub Area III was not fully surveyed and catch rates were low in most of the survey units, we cannot rule out the possibilities that there are pockets or populations of crab in this area. When you look at the fact of setting a fleet of 35 pots, which covers an area of only one-half nautical mile, into an area of 100 square nautical miles, the chances of finding crab are slim indeed.

7. CONCLUSION

The results of this survey have shown that there is a large population of unexploited crab extending to the northern, western and eastern edges of the Hamilton Bank. As a consequence, the viability for a commercial Snow crab fishery in the area in question appears promising.

8. RECOMMENDATIONS

1. Exploratory survey should be carried out on the shoal of the Hamilton Bank where depths exceed 140 meters.

2. Complete the survey in Sub Area III of Makkovik with time allotted in searching for suitable depth ranges around the Hopedale Channel.

3. Repeat survey in outside units where signs of crab existed but sea lice reduced fishing time (different date or earlier in the season).

4. The crab resource found during this survey could be an addition to the grounds fished by the existing fleet and also a base for issuing new harvesting licences to the fishermen of Labrador.

5. At present, in order for vessels to fish in this area, they should take into account the distance involved from a crab processing facility since three to four day trips would be required to fish in this area.

6. The potential for a centrally located crab processing plant exists along the Labrador Coast to ensure that lively crab arrive at the plant for processing.

7. Due to ice conditions in Spring and inclement weather conditions in the Fall, the season for harvesting crab in this area is short. This should not be a factor against establishing a limited number of licences or putting a quota system in place.

8. All necessary safeguards should be implemented so as not to deplete this renewable resource.